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ABSTRACT

Noting that child care has increasingly become a formal part of the American economy, this report examines the contribution of the child care industry to the national economy. The report presents evidence, based on an examination of the existing literature, that the child care sector contributes to the national economy in three ways: (1) quality child care increases future adults' productivity and reduces the risks of antisocial or criminal behavior; (2) child care produces employment resulting in tax revenues; and (3) formal child care enables Americans to pursue other income-generating activity. The report further presents evidence demonstrating that the economic benefits of child care far exceed the costs. The report concludes by asserting that child care services are essential for many of the nation's workers and that the ongoing success of welfare reform is substantially dependent on families having access to care. Unless the formal child care sector adds sufficient, affordable capacity to meet the expected demand, parents will not be able to fully participate in the American economy and family incomes will decline. Appended is a description of the methodology used to estimate economic impact, productivity impact, and employment. (Contains 60 endnotes.) (KB)

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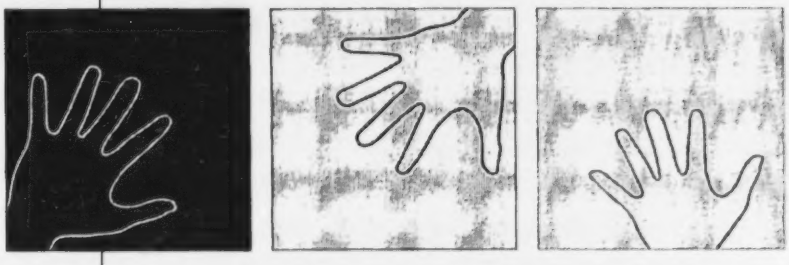

The National Economic Impacts of the Child Care Sector

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EXECUTIVE SUMMARY

THE UNITED STATES is currently experiencing a period of slow economic growth, with the national unemployment rate hovering around 5.7 percent. However, while current conditions are dampening job and wage growth, there is continuing strong demand for child care services. This is because most parents of young children work, and require child care to do so. Approximately 85 percent of fathers, and more than 50 percent of mothers with pre-school age (five years or less) children, are in the labor force.

Demand for child care is growing among all income groups. As a result of welfare reform, over the past decade lower income families have entered the labor force in greater numbers, necessitating increasing amounts of child care, some of which is financed by the government. At the same time, middle and upper-income parents tend to have fewer children than in previous decades — approximately 50 percent of children born today are the first or only child in their family, compared with 25 percent for the baby boom generation. This, combined with the shift to delayed child-bearing, results in more couples with two well-established incomes to spend on fewer children.

As a result of these trends, the formal child care sector — defined in this report as care provided to children prior to when they enter kindergarten at *licensed* child care centers and family homes, has become an increasingly important part of the national economy.

Child Care Sector Makes Substantial Contributions to the National Economy

Based on an examination of the existing literature, as well as use of the ImpactPlanning input-output model, the child care sector currently contributes to the national economic well-being in three critical ways, as follows:

- *In 2001 Americans spent approximately $38 billion a year on licensed child care programs, excluding care provided at unlicensed and informal facilities.* Expenditures on licensed care will be even higher in 2002 — likely exceeding $41 billion. As a result, and again excluding unlicensed and informal care provided by family and friends, *the sector creates enough income to support approximately 2.8 million direct, indirect, and induced jobs,* of which about one-third are in the child care industry itself. In addition, the sector generates almost $9 billion in tax revenues.
- *As indicated in Table Ex-One, the licensed child care industry directly employs more Americans than public secondary schools, and is directly responsible for twice as many jobs as the farming sector.*

TABLE EX-ONE

More Americans are Directly Employed in the Licensed Child Care Sector than as Secondary School Teachers

SECTOR	DIRECT EMPLOYMENT
Private Primary/Secondary School Teachers	432,000
Farming, Fishery, and Forestry	460,700
Accountants and Auditors	863,320
Public Secondary School Teachers	933,800
Child Care	**934,000**
College and University Faculty and Teaching Assistants	1,268,000
Public Primary School Teachers	1,409,140

In this respect, the nation's economy, famous for its agricultural products, should rightfully be as well known for the economic contribution associated with "growing children."

- *Child care provides an essential infrastructure which enables mothers and fathers to be employed outside the home, and earn necessary income. By making it possible for parents to work, the formal child care sector enables Americans to earn more than $100 billion annually.*

  The additional wages supported by the child care sector, in turn, have a substantial impact on the national economy, *engendering almost $580 billion in total labor income, approximately $69 billion in tax revenues, and supporting more than 15 million jobs.* That is, every dollar spent on the formal child care sector alone generates $15.25 in additional earnings by parents. In this sense the child care sector may be appropriately viewed as the working parents care sector, particularly enabling women to participate in the nation's workforce.

- *Substantial evidence demonstrates that the economic benefits of child care far exceeds its costs.* For example, quality child care has been shown to contribute to reductions in special education costs; lower school drop-out rates; decreased levels of criminal activity; and increased earning power, including reduced risks of poverty.

Accessible, Affordable Child Care is Essential to Economic Prosperity

Child care services are essential for many of the nation's workers -- without adequate and affordable care parents cannot work. Likewise, the ongoing success of welfare reform is substantially dependent on families having access to care.

Parents, and women in particular, are an increasingly critical part of the economy, especially in the high-technology sector. By the year 2010 upwards of 85 percent of the labor force will consist of parents, and the number of working women will exceed working men.

By the year 2010 the U.S. is expected to add another 1.2 million children aged four and under, a 6 percent increase. Unless the formal child care sector likewise adds sufficient, affordable capacity, parents will not be able to fully participate in the US economy. As a result, growth will be slowed, and family incomes will decline.

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Introduction

Raising children — "child care" — has always been a critical component of the national economy. Even before women became a significant part of the formal workforce their generally unpaid care of children enabled men to engage in wage-producing jobs. Child care formed the essential basis for young Americans to become productive participants in the economy. Over time, however, the child care sector has increasingly become a formal part of the economy. Caretakers are paid wages and, in turn, pay taxes, and significant investments are made in associated buildings and supplies, with concomitant economic benefits. The formalization of child care has prompted the need to better understand the contribution this sector makes to the economy.

The National Child Care Association (NCCA) retained M.Cubed,[1] a consulting firm specializing in resource economics and public policy analysis, to investigate the economic characteristics of the nation's child care sector. This research consisted of a review of existing data and literature related to the sector, as well as application of the IMPLAN input-output (I-O) model to estimate economic impacts.[2]

In addition to M.Cubed staff, project support was provided by Andre Ransom, Chair of NCCA's Business Development Task Force, as well as Task Force members, and Lynn White, NCCA's Executive Director. Likewise, this report builds upon a previous M.Cubed study examining the economic impacts of California's child care sector.[3]

The Child Care Sector Importantly Contributes to the National Economy

The child care sector contributes to the nation in three important and complex ways. First, quality child care serves to both increase future adults' capacity to lead high-caliber, economically productive lives, and reduces the risks of criminal or other anti-social behavior. The child care sector contributes to the development of children, children upon whom the economic fate of the nation ultimately depends. For example, one recent study found that for every dollar spent on high quality child care for children aged two to five years with employed parents, approximately two dollars worth of benefits are generated for children and their parents.[4] However, this aspect of child care is extremely complex, involving issues of the sector's current characteristics, and the trade-offs inherent in formal as opposed to family-based care. As a result, this report provides only a brief, qualitative discussion of this issue.

Second, as with any income-generating business, child care produces employment and associated personal income, and contributes to the gross domestic product (e.g., the value of goods and services created nationally). This, in turn, results in public sector tax revenues, both from the operation of for-profit child care facilities, and as a result of the sales, property, and income taxes applied to child care and related workers. These direct and multiplier impacts are the most straight-forward economic contributions of child care, though poor data quality may have resulted in under-estimates in previous economic studies.[5]

And third, formal child care enables Americans to pursue other income generating activity. That is, by relieving parents of the requirement to stay at home with their children, child care frees mothers and fathers to participate in the workforce, thereby contributing to the economy.[6] In this sense child care improves labor force productivity (e.g., increases the productive capacity of the workforce), and provides essential infrastructure for workers. That is, as with other types of infrastructure — roads; water supply; energy — the child care sector allows Americans to effectively pursue activities that have high economic value. This contribution to productivity and basic infrastructure is of greater significance than the direct impacts, but is also more difficult to estimate.

Parental Participation in the Workforce Depends on Access to Child Care

Less than 15 percent of American families currently fit the traditional model of husband as wage-earner and wife as homemaker. On one end of the gender scale, more than 10 percent of married fathers whose spouses work now serve as their children's primary care provider. Fathers are more likely to care for their children prior to when they enter kindergarten.[7] Likewise, approximately 15 percent of the almost one-third of children who are cared for by only one parent live with their father.[8] Nationally, father-headed families, while a small percentage of all households, are the fastest growing of all family types — the number of single primary caretaker fathers quadrupled between 1970 and the mid-1990s.[9]

In addition, most mothers, whether they be presently in a relationship or single, work. In 2000, 65 percent of women with children under the age of six; 72 percent of women with children aged three to five; 61 percent with children under age three; and 59 percent of women with children under age one were in the work force, with most working full-time.[10]

Women work both because they want to, and, more predominately, because of necessity. Some women work because they enjoy the challenge, independence, and stimulation associated with their professions. However, a recent poll found that two-thirds of working parents did so primarily to support their family, and a majority of working mothers would prefer to stay home with their children.[11]

Whether by choice or because of economic need, women play a crucial role in financially supporting their families. Approximately 55 percent of working women are responsible for half or more of their household's income, with almost 20 percent the *sole* family provider. Even among employed women in married couples, almost 50 percent contributed half or more of their families' earnings.[12] For example, from 1969 to 1996 the median income of married couple households with children rose by 25 percent almost entirely due to the increasing number of working mothers.[13] As income inequality worsens, and low-wage occupations demand more labor, there will be greater pressures on the remaining full-time mothers to enter the workforce, or increase their number of paid hours.

In addition to working mothers, who depend on child care to maintain their employment, many families in which the mother is *not working* outside the home purchase child care or early education for their children. More than 60 percent of children under the age of six (and not yet in kindergarten) whose mothers are *not* in the labor force are in some type of child care and early education arrangement.[14] Parents enroll their children in nursery schools or child care centers so that they can pursue education and search for work. But they also use such arrangements to enhance their children's development and school readiness; provide them with the opportunity to interact with other children; enable their offspring to explore their interests, and develop their talents and independence; build self-esteem; and learn how to successfully interact with others.

Formal Care Contributes to Child Development

Economists generally agree that investments in education — whether at the kindergarten or the college levels — provides for essential social benefits, including increased earning power and higher economic growth. Schools are considered to be the cornerstones of the "knowledge economy," producing both the workforce and citizens of the future. That is, today's schools produce tomorrow's entrepreneurs, public officials, and corporate executives.

As the evidence grows that child care activities focusing on infants and toddlers — ages zero to three — can profoundly influence a lifetime of development, it is increasingly compelling to consider the child care sector as part of the knowledge economy. This is borne out by a number of studies. For example, there is evidence that regardless of family income children who have participated in child care programs do better in school than their peers who did not.[15] Likewise, quality child care has been shown to contribute to:

- Reductions in special education costs.
- Lower school drop-out rates.
- Reduced levels of criminal activity. For example, one study found that participants in a pre-school program directed at low income families "...committed fewer delinquent or criminal acts, the acts they committed were less severe, and they were less likely to be chronic offenders..."[16]
- Increased earning power, and reduced risks of poverty.[17]

One study of the long-term impacts of a good early childhood program for low income children found that after 27 years, each $1.00 invested saved over $7.00 by increasing the likelihood that children would be literate, employed, and enrolled in post-secondary education, and making them less likely to be school drop-outs, dependent on welfare, or arrested for criminal activities or delinquency.[18]

The Child Care Sector Is a Significant Part of the National Economy

As discussed in the introduction, the child care sector directly contributes to the economy by producing jobs and income for Americans associated with the sector. Roundly speaking, the direct economic impacts of any industry is determined by estimating the amount of money spent on the identified activity, and tracing these funds through the relevant economy (e.g., a specific geographic area). For example, it can be determined, using available data, how much money Americans spend on various forms of transportation, including the use of airplanes, buses, cars, trains, and other forms of mass transit.

In the case of the child care sector, however, even this first step is difficult. This is because there is no clear consensus on what constitutes "child care;" there are conflicting data on how many children participate in the formal child care sector, for what length of time, and at what cost; and, more importantly, there is a great deal of "informal" care being provided (i.e., services that are not counted as part of economic census).

For the purpose of this study the child care sector has been defined as the "educational" and care services provided to children prior to when they enter kindergarten, and which they receive at licensed child care centers and family care facilities. This represents perhaps the narrowest of sector definitions, excluding spending on public and private primary and secondary schools; day and sleep-over camps; and care programs provided by museums, community centers, and other institutions.[19] It also excludes care provided in informal settings, including by relatives, nannies, babysitters, and parents.

Children's Participation in the Formal Child Care Sector

There are 37 million families with children under the age of eighteen, in which more than half the single head of household or both parents work.[20] These children are cared for in a variety of situations, from professional nannies to licensed child care centers to informal relative or neighbor care.

Table One indicates the number of facilities providing *licensed* child care. Nationwide, 60 percent of working families in which the youngest child is under age five paid for licensed or informal care.[21] Likewise, just over half — 52 percent — of the children under the age of five with working mothers are cared for informally (e.g., by relatives, friends, or at non-licensed places), with the rest 48 percent care for at licensed child care or family facilities.[22]

There are large state-specific variations in the percentage of children enrolled in formal child care arrangements. For example, while 55 percent of children under age five are cared for in center-based or family child care in Minnesota, only 35 percent receive such care in California. These state differences are likely the result of variations in the costs and supply of formal child care, as well as state-specific demographic and labor patterns and child care subsidy policies.[24]

Demand for Quality Child Care is Likely to Remain High

Demand for quality child care services is likely to remain strong for the foreseeable future, due to several related factors. First, at just under 4 million a year, births are currently at historically high levels, resulting in a growing pool of potential "clients" for child care services.[25] Second, as previously discussed, the high cost of living and increasing standard of living preferences are necessitating two full-time wage earners for most families. As a result, a growing percentage of parents, and women in particular, are participating in the workforce. With a rising number of employees with children, corporations are also generating new demand for child care services.[26] This steady increase in demand has resulted in child care workers being among the fastest growing occupations for the decade 1998-2008, with estimated growth of 26 percent during the period.[27]

Demand for more costly, high-quality care is also growing. Approximately 50 percent of children born today are the first or only child in their family, compared with 25 percent for the baby boomers. This, combined with the shift to delayed child-bearing, results in more couples with two well-established incomes to spend on one or two children. As a result of this increased

TABLE ONE

Estimated Number of Licensed Child Care Providers"

	NUMBER OF FACILITIES
Family Day Care Providers/Homes	306,246
Child Care Centers	113,298
Public Sector Agencies	55,000
Churches	23,000
Hospitals	900
U.S. Military Bases (Worldwide)	639
Colleges and Universities	1,400
Community Service Organizations	2,000
Total	**500,143**

demand for higher quality care, the economic impact of children born today is far greater than those born thirty years ago (i.e., more is being spent per child in real terms).

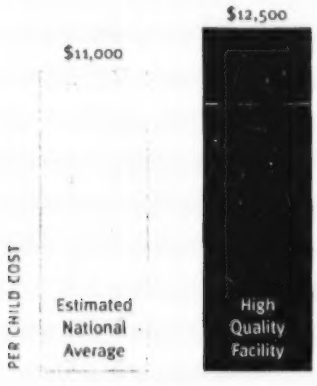
Although there are substantial vacancy rates at child care facilities in certain states and regions, there are supply shortages in many urban areas, and for particular types of care (e.g., infant/toddlers). As a result, many families have trouble finding quality child care in their communities. In particular, many centers are not able to provide cost-effective infant care, since more staff and space are needed to provide the necessary attention. The entry-level jobs available to many low income parents are frequently night shift positions (e.g., health care staff, security guards, cleaning staff), creating some demand for night care services which did not previously exist.[28]

There is large variation in the fees charged at licensed facilities throughout the nation. In general, fees have been increasing at an average rate of 7 percent a year, a higher-than-inflation price increase. This child care inflation rate in part reflects the growing demand for higher quality care as represented by rising wages and, as indicated in Table Two, higher facility costs.[29]

Many children are cared for informally, including by unlicensed providers. Although the quality of informal care may be unknown, it represents a significant amount of expenditures, thereby directly contributing to the national economy. There is some evidence that unlicensed care givers may be paid similar fees as licensed facilities, though common sense would suggest that in many cases rates are lower.[31] Likewise, a sizeable percentage of relative-provided care is paid — from 15 to 40 percent in the case of children under the age of six — at rates that may be as high as 70 percent of those charged by licensed child care.[32]

TABLE TWO

Cost to Develop Space for One Child in a New Facility[30]



Almost $40 billion Spent on Child Care in 2001

In 2001 Americans spent an estimated $38 billion on early care and education for children under the age of five.[33] Given data uncertainties, as well as the hidden nature of paid but informal child care, expenditures could be much higher — as much as 50 percent higher than these estimated expenditures. Revenues for the licensed child care sector have increased by approximately 10 percent over the last few years, and are expected to continue to grow at similar rates for the near future.[34]

Local, state, and federal governments are responsible for paying for a portion of national expenditures on child care services, including financing child care, child development programs, child care facilities, and training. Overall, families pay approximately 60 percent of the total annual estimated expenditures on child care nationwide, with the public sector — federal, state, and local — paying about 39 percent, and private sector businesses and non-profits contributing just 1 percent.[35] In contrast, families pay only approximately 23 percent of the cost of a public college education, and the private sector makes substantially greater investments in higher education than early care.[36]

The public sector share for child care translates into approximately $15 billion annually. The majority of federal funds that subsidize children comes from three programs: the Child Care Development Fund, Temporary Aid to Needy Families, and Head Start.[37] In addition, states pay for a variety of child care programs, including pre-school initiatives.[38] As a result, government is an important determinate of child care supply and prices.

To the extent that public sector dollars are spent at not-for-profit or publicly-owned facilities, as opposed to for-profit centers, no additional tax revenues are generated. Approximately 70 percent of existing licensed family homes and child care facilities are for-profit establishments, with the remainder being tax exempt.[39]

Formal Child Care Generates 2.8 million Jobs

Excluding informal care, total child care expenditures serve to directly, indirectly, and induce approximately 2.8 million jobs, of which about one-third are in the child care industry itself. In addition, the sector generates more than $9 billion in tax revenues.[40]

Table Three compares direct child care employment of approximately 934,000 jobs with employment in other economic sectors. As indicated in the table, *the licensed child care industry directly employs more Americans than public secondary schools, and twice as many as are directly employed in agriculture.* In this respect, the national economy, which is famous for its agricultural products, should rightfully be as well known for the economic contribution associated with "growing children."

This estimate reflects the number of full-time equivalent annual jobs in the licensed child care sector. The number of individuals *involved* in providing child care in a given year, either on a part-time or seasonal basis, is much higher. For example, the Center for the Child Care Workforce recently estimated that 1.2 million individuals received some compensation to care for children ages zero to five at centers or family child care settings. Likewise, another more than 1.1 million people are paid to provide care as part of informal systems (e.g., relatives; nannies).[42] An explanation of the difference between the Center's and M.Cubed's employment estimates is presented in the report's Appendix.

Although child care is not, overall, a high paying field — the average salary for a child care worker ranges from a high of $21,060 in Massachusetts to a low of $12,990 in Louisiana — the job frequently provides one key benefit: free or subsidized child care.[43] Approximately 40 percent of child care workers have children.[44] To the extent that these workers rely on their employer, or themselves, if self-employed, to subsidize some or all of the costs of care for their children, the value of job benefits may be equal to half again as much as their take-home pay.

TABLE THREE

More Americans are Directly Employed in the Licensed Child Care Sector than as Secondary School Teachers[41]

SECTOR	DIRECT EMPLOYMENT
Private Primary/Secondary School Teachers	432,000
Farming, Fishery, and Forestry	460,700
Accountants and Auditors	863,320
Public Secondary School Teachers	933,800
Child Care	**934,000**
College and University Faculty and Teaching Assistants	1,268,000
Public Primary School Teachers	1,409,140

Child Care is Critical to National Productivity

In addition to its direct economic impacts and contribution to children's development, the child care sector plays a critical role in productivity growth, and, as a result, in overall economic prosperity. Simply stated, the availability of child care enables parents to work. Without adequate child care infrastructure, fathers' and mothers' participation in the work force would be much lower, significantly reducing the pool of skilled labor.[45]

A half-century ago women's participation in the labor force was limited — approximately 10 percent of women with children under the age of six worked.[46] This low workforce participation coincided with the return of American men from World War II, and would prove to be a temporary phenomenon. By the late 1950s women were going to work in increasing numbers. By 1970, 32 percent of women with children under six worked outside of the home, and by 1996 this percentage had almost doubled, to 62 percent.[47] Simultaneously, although there have been some noticeable year-to-year variations, male participation in the workforce has been fairly consistent, with more than 85 percent of fathers holding full-time jobs.

Of the nearly 65 million jobs created nationally between 1964 and 1997, 40 million were occupied by women. The number of women holding jobs doubled in every industry except manufacturing during the period.[48]

The future of the nation's economy will be in the hands of parents in general, and women in particular. By the year 2010 it is likely that 85 percent of the labor force will consist of parents, and the number of working women will exceed working men.[49] Many of these women will be single mothers. For example, births to unwed mothers hit an all-time high in 1998, representing nearly half of all babies born that year. And unlike the 1990s, when teenagers were responsible for most of these births, in the new century unwed mothers are more likely to be professional women in their twenties and thirties.[50]

Women will also represent a greater share of the skilled labor force. While the number of men enrolled in college has declined since 1991, the number of women has steadily grown. In 1999 women were awarded 56 percent of all bachelors degrees nationally, and more than 40 percent of all doctoral degrees. By 2007, one-third more women — 9.2 million compared to 6.9 million — will graduate from college than men.[51]

In this context the availability of quality child care contributes to labor productivity in three primary ways, as follows:

- Increased labor force participation — both in terms of number of jobs and quantity of hours worked — by providing mothers and fathers with the opportunity to engage in work outside the home.[52] Child care enables parents to pay a portion of their income to providers in exchange for the opportunity to keep the remainder of their pay check.

- Higher income, by permitting parents to maintain job skills and continuous employment experience. Child care enables parents, particularly mothers, to keep their jobs longer, and reduce potentially wage- and skill-reducing absences.

- Lower absenteeism and turn-over rates, by providing parents with the peace of mind that their children are receiving responsible care. Parents at work are no different than parents at home — they are concerned about the well-being of their children. Child care contributes to a stable and consistent workforce. In this respect formal child care — center-based programs — experience the fewest "break-downs" in service. As a result, the formal child care sector contributes more to this element of productivity than non-parental informal care.[53]

All told the nation's child care sector is analogous to its transportation system. That is, our system of roads, mass transit, and airports enables people to get to work, with the confidence that at the end of the day theyll be able to come home. Traffic congestion and poor quality transit, just like inadequate child care infrastructure, slows workers down, and reduces overall productivity.

It is extremely difficult to accurately estimate how the emergence of a sizable formal child care sector has affected labor productivity. A large number of changes — including the rise of high-technology; shifts from manufacturing to service industries; globilization; and alterations in gender roles — have impacted both short- and long-

term productivity. Untangling these complex variables is not easy, and to date very little effort has been expended to isolate the child care sector's influence on economic growth.

Although simplistic, one way to develop a round estimate of the economic contribution of the child care sector is to examine the number of jobs parents are able to hold because of their ability to find secure care for their children. That is, without the formal child care sector fathers or mothers would have to (1) stay at home with their children; (2) depend on informal care, some of which would be paid for; or (3) do some combination of both and work part-time. From this perspective the dollar value of formal child care is the extra wages parents are able to generate for their families after child care costs are netted out. For example, in 2001 employee-financed "back-up care" — care provided when a parents regular child care situation breaks down — alone saved Goldman Sachs employees more than 3,500 workdays, equal to $1.3 million in wages.[54]

As previously discussed, the child care sector cost the nation's parents, governments, and corporations approximately $38 billion in 2001. Studies indicate that, absent government subsidies, higher income parents are more likely to pay for child care than low income parents. For example, low income fathers — those making less than $20,000 a year — are more than three time more likely to be responsible for primary care for their children than fathers earning in excess of $50,000 annually.[55] Likewise, 55 percent of dual-employed couples earn annual incomes of $50,000 of more.[56] That is, professionally-employed parents tend to rely on the formal child care sector to a greater degree than less skilled workers.

Formal Child Care Enables Parents to Earn $102.5 billion Annually

Based on the conservative assumption that the primary care giver in a dual- or single-parent household with children in formal child care earns between $26,000 and $52,000 a year, and netting out the costs of the care itself, *the formal child care sector enables parents to earn approximately $102.5 billion annually.* As indicated in Table Four, these wages, in turn, have a significant impact on the economy, *engendering $579 billion in total direct, indirect, and induced labor income, more than $69 billion in tax revenues, and supporting approximately 15.2 million jobs.* Put differently, for every dollar parents invest in formal day care services they receive back $15.25 in additional wages.

Representing $904 billion — and almost 10 percent of the nation's 10 trillion dollar economy — child care's leveraging effect contributes more to gross domestic product (GDP) than the sector-specific impacts of a number of the nation's high-profile industries, including agriculture ($151 billion), construction ($426 billion), retail trade ($792 billion), and motion pictures ($27 billion).[57] In this respect the child care sector may best be viewed as the "parent's employment sector" — the true contribution of child care is that it enables the nation's pool of talented and skilled parents to engage in the formal economy.

In addition to these economic benefits, by enabling more parents to participate in the workforce, the formal child care sector likely serves to reduce public sector spending on social services (e.g., Medicaid, Temporary Aid to Needy Families), an affect that has not been captured herein.

TABLE FOUR

Direct, Indirect, and Induced "Productivity" Effects of Working Parents Made Possible by Formal Child Care ($, 2002)

ECONOMIC VARIABLE	CONTRIBUTION
Industry Output (Sales)	$1.5 trillion
Value Added (Gross Domestic Product)	$904 billion
Labor Income	$579 billion
Taxes	$69 billion
Employment	15.2 million jobs

TABLE FIVE

Child Cares Productivity Impacts are Greater than the Gross Domestic Product Contribution of Many Higher Profile Industries ($, 2002)

SECTOR	GDP CONTRIBUTION
Motion Pictures	$27 billion
Agriculture	$151 billion
Construction	$426 billion
Retail Trade	$792 billion
Child Care	**$904 billion**

Future Implications for the Nation's Economy

The child care sector significantly contributes to the national economy — in 2001 Americans spent approximately $38 billion on licensed child care programs alone, excluding care provided at unlicensed and informal facilities. Expenditures on licensed care will be even higher in 2002 — likely exceeding $41 billion. The licensed child care industry directly employs almost as many Americans as public secondary schools, and is twice the size of the agricultural sector. As a result, and again excluding unlicensed and "informal care" provided by family and friends, the sector serves to create enough income to support approximately 2.8 million jobs, of which about one-third are in the child care industry itself.

As the national population grows — from approximately 272 million citizens today, to almost 300 million by 2010 — so too will its number of children. The population of Americans aged four or younger is expected to increase by 1.2 million over the next decade, a 6 percent rise. Likewise, as previously discussed, the proportion of parents who depend on formal child care services so they can participate in the workforce is also expected to grow. At the same time it is becoming increasingly challenging to maintain even the existing child care infrastructure. It is costly to develop new child care facilities, and, as a result of restrictive policies and inadequate funding, low child care salaries make it difficult to attract new workers, or to provide child care staff with the educational resources they need.[58]

The health of the national economy is dependent on the ongoing provision of necessary "infrastructure," including transportation, housing, and, most importantly, a qualified labor force. Likewise, the availability of a high quality labor force is perhaps the single biggest factor in the nation's future prosperity. Parents, and mothers in particular, make up the largest — and fastest growing — source of skilled labor. As a result, access to child care is a critical component in the availability of qualified workers. Without adequate child care infrastructure, the nation's economic prosperity would be threatened, and growth would be slowed. Unless the formal child care sector adds sufficient affordable capacity, economic growth will be hobbled, and family incomes will decline.

In the longer-term secure knowledge that quality child care is available would also encourage women to pursue higher-paying jobs which would make a greater contribution to the economy. Historically women have been concentrated in sales, service, and clerical jobs, both because of past barriers to entry to male-dominated careers, for two reasons — past barriers to entry to male-dominated careers and women's desire to pursue jobs which are easier to enter and exit, offer more part-time employment, and provide for more flexibility in work hours. These historically female occupations tend to be low-wage. Should young women be both more career-oriented and confident that they can pursue higher-wage professions with less flexibility without sacrificing the quality of their children's care, they may be more apt to do so.[59]

State and federal policies fully or partially finance every other essential infrastructure supporting the economy. For example, gasoline taxes pay for highways and mass transit; home mortgage tax deductions and other policies make housing more affordable; and public education is financed by property taxes and other revenue sources. It would appear to be time for policymakers to provide the private early care and education infrastructure the same support as other economically critical sectors.[60]

ENDNOTES

1. Steven Moss, M. Cubed Partner, served as lead investigator for the project, with support from Robert Mott and Susie Sargent. Julie Ann Yuen was responsible for report graphics.Mr. Moss has a Masters of Public Policy from the University of Michigan. In addition to his work at M. Cubed, he is an Adjunct Lecturer in the Public Administration Program at San Francisco State University; is a Board of Supervisor's Appointee to the Potrero Power Plant Citizen's Advisory Task Force; and a Governor's Appointee to the California Inspection and Maintenance (Smog Check II) Review Committee.

2. I-O models use disaggregated data on industrial and commercial economic activity within a specific geographic region to estimate spending, income, and employment patterns in particular business sectors. For additional insight into the structure of these models see Steven Moss, et. al., *A Guide for Reviewing Environmental Policy Studies*, published by the California Environmental Protection Agency, Spring 1994.

3. Steven Moss, *The Economic Impact of the Child Care Industry in California*, published by the National Economic Development and Law Center, Fall 2001.

4. See Gordon Cleveland and Michael Kashinsky, *The Benefits and Costs of Good Child Care*, March 1998.

5. The net benefit of working mothers to the economy is the difference between the market value of the work in which they engage and the value of home production. However, existing economic models do not count "informal" activities (e.g., work for which money is not paid). As a result, this report ignores the implicit economic trade-offs between employed and stay-at-home parents.

6. Female participation, specifically by mothers, in the formal economy is a complex and highly-charged subject, involving issues of individual freedom; economic need; and family values. In many cases a mother might not choose to work outside the home, but must do so to provide essential family income. However, despite increases in the number of hours worked, the amount of time employed mothers spend with their children has remained about the same over the past two decades, while the amount of time fathers dedicate to their offspring has increased. As a result, children appear to spend somewhat more time with their working parents today than twenty years ago.

In any case this analysis does not address the normative issues surrounding women and work, but rather focuses on the economic consequences of such activity. See Patricia M. Anderson and Phillip B. Levine, "Child Care and Mothers' Employment Decisions," National Bureau of Economic Research (NBER) Working Paper Number 7058, March 1999; National Study of the Changing Workplace (NSCW), 1997 Survey.

7. Lyne Casper, "My Daddy Takes Care of Me!," *Current Population Reports*, P70-59, September 1997.

8. Another way of saying this is that 4 percent of the nation's fathers with children under the age of eighteen serve as the sole caretaker for their children. U.S. Census Bureau, *Current Population Reports*, P20-514, 1999.

9. National Council on Fathering, "Trends in Fathering," <http://www. fathers. com/1999research/trends. html>.

10. Reva Wywadis, "Wywadis: Child Care Costs must be controlled," September 1, 2001; Committee for Economic Development, op. cit. ; Child Care Partnership Project, "It's Good Business to Invest in Children;" U.S. Department of Labor, Bureau of Labor Statistics, *News, February 4, 2000;* U.S. Department of Labor, *Report on the American Workforce*, Many of these are in part-time jobs. For example, on average working women with children under three work 30 hours a week; with children from three to five 33 hours a week, and with children from six to seventeen 36 hours a week. The U.S. Census defines "full-time" as an individual who works "35 hours or more a week during a majority of the weeks worked during the preceding calender year. "

11. Cathleen Decker, "Finding Child Care a Tough Task for Many Californians," *Los Angeles Times*, June 20, 1999.

12. *1999 Key Facts.*

13. *Children's Budget, 1999-2000.*

14. Kathryn Tout, Martha Zaslow, Angela Roman Papillo, Sharon Vandivere, "Early Care and Education: Work Support for Families and Developmental Opportunity for Young Children," Urban Institute, September 2001.

15. Peisner-Feinberg, Ellen S., et. al., Cost Quality and Outcomes Study, at <http:www. fpg. unc. edu/-NCEDL/PAGES/cqes>; Cleveland and Krashinsky, op. cit.

16. Hirokazu Yoshikawa, *Long Term Effects of Early Childhood Programs on Social Outcomes and Delinquency, The Future of Children Long-Term Outcomes of Early Childhood Programs*, Volume 5, Number 3, Winter, 1995. Likewise, a survey of police chiefs found that more than 90 percent agreed that "America could sharply reduce crime if government invested more in programs to help children and youth get a good start. " See Children's

Defense Funds, "Polls Indicate Widespread Support for Increased Investments in Child Care," at <http://www.childrendefense.org/childcare/cc_polls.html>.

17. For example, a study of an enriched pre-school program found that participants' earnings when they reach 27 were 60 percent higher than a control group. Lynn A. Karoly, et. al., *Investing in Our Children*, RAND, 1998.

18. 1999 Key Facts.

19. Nor does it include foster homes or juvenile delinquency programs.

20. <http://www.census.gov/population/projections/state/stpjage.txt>

21. Linda Giannarelli and James Barsimantov, *Child Care Expenses of America's Families*, The Urban Institute, Occasional Paper Number 40.

22. Ibid. Here again available statistics vary. Some sources indicate that relatives were responsible for slightly more than 40 percent of child care arrangements for preschoolers with working moms. In any event over time mothers are likely to increasingly shift their care arrangements away from informal arrangements to those which involve direct payment. For example, the share of children under age five enrolled in center-based care nationwide increased sharply between 1977 and 1993, from 13 to 30 percent. See Lynne M. Casper, "What Does It Cost to Mind Our Preschoolers," *Current Population Reports*, P-70, Number 52, September 1995, Washington, D.C. ; U.S. House of Representatives, *1996 Green Book*.

23. 2002 data for family and centers; 1997 data for all other categories. Data collected from the Children's Foundation Research and Marketdata Enterprises, Inc.

24. Jeffrey Capizzano, Gina Adams, and Freya Sonenstein, "Child Care Arrangements for Children Under Five: Variation Across States," The Urban Institute, Series B, Number B-7, March 2000.

25. Ibid.

26. At least 15 percent of corporations currently offer "back-up" care — emergency child care in cases where a parent's regular care arrangement breaks down — as a perk. This care is typically unlicensed by the states. Julie Halpert, "The Nanny Is Late. You Have a Speech. What Now?" *The New York Times*, April 28, 2002.

27. U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Employment Statistics*, Washington, D.C., 2000.

28. Likewise, annual turn-over rates for teachers in child care centers is almost one-third. Children's Defense Fund, *California: Child Care Challenges*, May 1998.

29. States typically impose facility regulations which influence building costs. For example, California requires 35 square feet per child and one sink and one toilet for every fifteen children.

30. <http://www.futureofchildren.org/information2827/information_show.html>

31. Given the tax advantages of "under the table" care (i.e., tax avoidance) these providers are likely to be paid from 15 to 40 percent less than licensed care.

32. For example, one study in Washington State found that relatives, friends, and neighbors who provide care do so for an average of 18 hours a week, and 40 percent of them get paid for it. On average families who rely on relatives for pre-school care paid $42 a week. Ascribe Newswire, "The Grandparent Effect: Relatives, Friends, Neighbors Provide Majority of Child Care, Want Support to do a Better Job, Study Finds," February 21, 2002. See also Anderson and Levine, 1999, op. cit,; Lynne M. Casper, 1995, op. cit. ; Marketdata Enterprises, Inc., 2001, op. cit.

33. Available data provides mixed information on nationwide spending on child care services. At the low side, U.S. Census data implies that just over $20 billion was spent on "child day care services" in 2001. However, this number is inadequate in that it excludes self-employed persons and small establishments, which represent a substantial portion of the child care industry, including almost all family child care homes and many proprietary centers. On the high side, Marketdata Enterprises, Inc., a proprietary firm which produces an annual report on the national child care sector, indicates that in 2001 almost $44 billion was spent on "child care day services, nanny, and au pair agencies," the later two categories of which are not part of the licensed child care sector as defined in this report. The $38 billion estimate adopted in this report is based on a "most reasonable estimate" resulting from an examination of these data, as well as information from the IMPLAN model — which implies 2001 expenditures of approximately $32 billion — and the previous M. Cubed study on the California child care sector — which implies national 2001 expenditures of almost $43 billion.

34. Marketdata Enterprises, Inc., *US Child Day Care Services, Nanny and Au Pair Agencies: An Industry Analysis*, July 2001.

35. The federal government is responsible for 25 to 30 percent of total spending, while state and local governments contribute 15 to 20 percent. Given data uncertainties corporations and non-profits may provide as much as 5 percent of the total. 1999 *Key Facts*, op. cit. ; Wywadis, op. cit. ; Committee for Economic Development, op. cit.

36. A. Mitchell, L. Stoney, and H. Dichter, *Financing Child Care in the United States: An Illustrative Catalog of Current Strategies*, Ewing Marion Kaufman Foundation, 1997.

37. Committee for Economic Development, *Preschool for All: Investing in a Productive and Just Society: A Statement of National Policy*, 2002.

38. Taxpayers also receive an estimated $2. 8 billion in credits through the Dependent Care Tax Credit, in which families may claim an income tax credit for a portion of their child care expenses (1998 data). Taxpayers may claim up to $2,400 in dependent care expenses for one child, or $4,800 for two or more children. The credit is on a sliding scale, with lower income families receiving slightly larger credits. See Marketdata Enterprises, Inc., op. cit.

39. Based on data from U.S. Census Bureau, August 16, 2001.

40. Tax revenues associated with child care services would be significantly higher except for the fact that the sector tends to be dominated by non-profit organizations — perhaps two-thirds of providers are not-for-profit.

Indirect Business Taxes (IBT), as reported by IMPLAN, consists of excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses, and sales and use taxes paid by individuals to enterprises in the normal course of business. *It does not include taxes on profit or income.* IBT values are derived from the U.S. Bureau of Economic Analysis Gross State Product data, wherein the ratio of employee compensation to IBT is determined for each industry sector in the 500+ sector input-output model. The reported IBT values are statistically-based estimates of taxes, fees, and other revenues paid at the time of the transaction, and are the sum of the amounts provided to all jurisdictions.

41. U.S. Bureau of Labor Statistics; National Center for Education Statistics, *Mini-Digest of Education Statistics*, 2001.

42. See Center for the Child Care Workforce, *Estimating the Size and Components of the U.S. Child Care Workforce and Caregiving Population*, May 2002. Both the M. Cubed and Center for Child Care Workforce employment estimates are higher than indicated by the Bureau of Labor Statistics, which reports 398,090 "child care workers" and 357,220 "preschool teachers," a total of 755,310. See <http://stats. bls. gov/oes/2000/oes_25Ed>.

43. These 2000 data were obtained from <http://stats. bls. gov/oes/2000/oes_39Pe>

44. "A Profile of the Child Care Work Force," *Child Care Bulletin*, Issue 16, August 1997

45. This analysis excludes the positive social contributions associated with "better" children (e.g., lower crime rates; increased participation in civic and cultural life), as well as the increased productivity of the children themselves.

46. Historically — a century ago or more — both parents worked at jobs close, or at, home, and women were the primary caretaker of young children.

47. Anderson and Levine, 1999, op. cit. Women's number of average weekly work hours has also steadily risen over the period, by a total of 5 percent from 1976 to 1998. Likewise, the proportion of female workers who reported working, on average, more than 40 hours a week increased from 14. 1 to 19. 9 percent from 1983 to 1993, and the percent of women who reported working 60 or more hours per week almost doubled between 1979 to 1998: from 2. 4 to 4. 4 percent. U.S. Department of Labor, 2000, op. cit.

48. U.S. Department of Labor, *Women's Jobs: 1964-1997*, at <http://www. dol. gov/dol/wb/public/jobs6497>

49. Child Care Partnership Project, op. cit.

50. Associated Press, "Women in Their 20s Create Baby Boomlet," *San Francisco Chronicle*, March 29, 2000.

51. U.S. Department of Education.

52. Upwards of 80 percent of employees with children miss work at some point because of child care problems. Halpert, op. cit.

53. NCSW, 1997, op. cit.

54. These savings are net of the costs of providing care. Halpert, op. cit.

55. Casper, 1997, op. cit.

56. Tamar Lewin, "A New Majority — Families With Both Parents Working," *San Jose Mercury News*, October 24, 2000.

57. These sectors may also contribute to productivity, an effect which is not captured by these data. U.S. Bureau of Economic Analysis, *Survey of Current Business*, December 2000.

58. Center for the Child Care Workforce, "Rights Raises, Respect," *News and Issues for the Child Care Workforce*, March 21, 2000.

59. See Cleveland and Krashinsky, 1998, op. cit.

60. Decker, op. cit

Economic Impact Estimating Methodology

IMPLAN's national economic database for the year 1998 was used to develop the economic estimates. The model was used to construct a system of inter-industry transaction accounts and an associated social accounts matrix (SAM) for tracking transfers of income among institutions (households, enterprises, and governments). The key to IMPLAN, as with other input-output models, is its system of multipliers, which translates direct changes in industry output or final demand for a commodity into final values reflecting the recirculation of income and spending through the economy (referred to as the subsequent indirect and induced effects of the direct change). This process of recirculation results in a multiple expansion (or contraction, in the case of a decline in initial output or demand) of earnings, output and employment, which is the result of households and other economic units changing their spending due to the stimulus associated with the initial change in output or demand.

The IMPLAN model was used to apply national multipliers for such variables as industry output (or gross sales), labor income (employee compensation and self-employed earnings), property-type income (corporate profits, dividends, rents and other returns on capital assets), indirect business taxes (mainly sales and property taxes), and employment. The labor and property income and tax variables together comprise the concept of "value added," which represents the activity's contribution to gross domestic product, the standard economic measure of the value of all goods and services produced in the country in a year.

The multiplier process involves three stages of effects: direct, indirect, and induced. The direct effect is the initial change in an industry's output or demand for a commodity. It involves the factors of production — employees, property, and other resources — directly producing the initial good or service. The indirect effect involves the suppliers of goods and services to the direct effect sector replacing their inventories drawn down by sales to the initial direct effect industry. Finally, the induced effect involves the economic sectors and industries receiving expenditures by households and other institutions earning income at the direct and indirect stages. Spending on consumer goods and services out of the wages, salaries, and other earnings of the direct and indirect stage factors of production circulates and recirculates through the economy until it is dissipated through "leakages" in the form of savings and payments for goods and services from outside the local economy. In the end, the cumulative changes in income and employment are a multiple of the initial direct effect.

The starting point for this analysis is an estimate, the methodology for which is described below, that parents are able to earn $102.5 billion more than they otherwise would as a result of the availability of child care. The IMPLAN analysis then worked backwards from the "new" parent-related labor income to the associated total industry output. This approach is based on the assumption that parental earnings equal to $102.5 are already embedded in the national economy; the purpose of the analysis is to determine the associated implications of these earnings to the economy. An alternative approach would be to treat these earnings as new demand; however, this approach would under-estimate impacts.

Information on the industrial composition of parental jobs is not available. As a result, it was assumed that these jobs are distributed in the same fashion as national employment. This assumption may tend to overstate impacts, since the additional earnings are dominated by women, who tend to have lower-paying jobs than men. To be manageable, the model was aggregated to the one-digit SIC level of industrial activity (e.g., agriculture, mining, construction, manufacturing, trade, services), after which the employment levels and output that would be associated with the estimated wages could be derived

The model was built using the Type SAM multiplier with the trade flows basis set in the "Regional Purchase Coefficient" mode with "Maximum RPC." For the impact analysis step

the values of new output were specified on an industry basis with 100 percent in-nation spending, deflated to the year 2002.

Productivity Impact Estimating Methodology

As discussed in the body of the report, it's extremely difficult to estimate the productivity benefits associated with the formal child care sector. A simplified approach was taken in this analysis, in which is was assumed that productivity can roundly be measured by estimating the amount of wages the formal child care sector enables parents to earn, and subtracting out the associated child care costs. That is, by relying on the formal child care sector parents are able to work and generate income, something they could not do without the availability of child care infrastructure.

Based on this approach, direct productivity impacts were estimated through the following steps:

- U.S. Census data on the number of two- and one-parent households in which one or more children under six resides were collected. These data were supplemented with information on individual earnings by full- and part-time working parents, segmented by gender, as indicated in Table A-1.
- Because of the way Census data is reported, the number of families with children under the age of seven were used in the estimates, thereby omitting families who rely on after-school programs for children seven to fourteen. This would tend to under-estimate productivity benefits, as the additional income families with school-aged children are able to earn are excluded.
- It was assumed that the mother served as primary care-giver in the case of dual income households (i.e., without formal child care it is the mother, rather than the father, who would care for the children, and thereby defer any earnings). Average earnings for women between the ages of 25 and 44 were used for this category.
- Although evidence suggests that higher income households rely on formal care more than lower income households, average incomes were used as the basis for the analysis, again possibly resulting in an under-estimate.
- The entire national expenditure paid for by families was netted out from the estimate of total earnings generated as a result of formal child care support. This approach omits the public sector support provided to many of these families, which, in many cases pays for the entire cost of child care. It also places the entire cost of the formal system on children six years or younger, excluding after-school programs.
- The analysis relied on previous estimates that center and family-based care account for 48 percent of the care provided to children aged five and under.

TABLE A-1

Number of Families with Children Under Age Six

	NUMBER OF FAMILIES	MEAN EARNINGS OF PRIMARY CARE-GIVER
Dual Parents, Working Part-Time	4,395,000	$25,644
Dual Parents, Working Full-Time	3,586,000	$36,427
Single Father, Working Part-Time	218,000	$45,908
Single Father, Working Full-Time	627,000	$51,959
Single Mother, Working Part-Time	1,201,000	$25,644
Single Mother, Working Full-Time	1,559,000	$36,427

Employment Estimating Methodology – M.Cubed as Compared with the Center for the Child Care Workforce

The Center for the Child Care Workforce recently issued an analysis, titled *Estimating the Size and Components of the U.S. Child Care Workforce and Caregiving Population*. The Center's report included data on the number of Americans engaged in providing non-parental, paid care to children between the ages of zero and five. The Center found that 2.3 million individuals were paid to care for children under the age of six and at a single point in time. This included 550,000 working in center-based settings; 650,000 who provide family child care; 804,000 who are paid relatives other than family child care providers; and 298,000 non-relatives who work outside center or family child care programs.

Unfortunately, the Center's and the employment estimates contained herein are not directly comparable. The primary difference between the two calculations is that the Center's estimate focuses on *all* individuals who were provided compensation to care for children at some point during the year, while the M.Cubed estimate reflects the total number of full-time, year round jobs represented by the *licensed* child care sector. This difference stems from two distinct methodological approaches. The Center's estimates are principally demand-driven (i.e., how many individuals does it take to provide non-parental child care given existing demand and kinds of jobs available), while M.Cubed's estimates are expenditure-driven (i.e., given prevailing wages how many jobs does the overall expenditures on child care support).

Other key differences in analytic approaches are summarized in Table A-2. A "+" indicates that the M.Cubed approach would tend to result in higher estimates than the Center's; while a "-" implies the opposite.

These differences point to an important implication. As with agriculture, and unlike most other employment sectors, child care supports a substantial amount of "seasonal," intermittent, and part-time work. As a result, it is difficult to easily capture child care's employment characteristics. While the majority of workers are likely engaged in full-time, annual employment, there is a considerable amount of turn-over, even among full-time jobs. In addition, there are a substantial number of part-time and seasonal workers, as well as workers who may provide child care on an occasional basis. In this sense the child care sector provides both long-term professional opportunities for Americans, and is an important source of an occasional or part-time paycheck. This labor force flexibility may meet the needs of both workers and parents.

TABLE A-2

Key Differences Between Center's and M.Cubed's Employment Estimating Approach

CENTER	M.CUBED
Includes ages zero to five.	Includes ages zero to five as well as after-school programs (+)
Includes all paid care	Includes licensed care only (-)
Represents full-time, part-time, and intermittent workers.	Represents full-time, annual equivalents only (-)
Includes child care workers only.	Includes non-child care worker support and administrative staff (+)

A "+" indicates that the M.Cubed approach would tend to result in higher estimates than the Center's; while a "-" implies the opposite.

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